



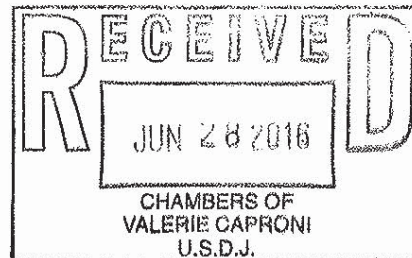
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June 24, 2016

The Honorable Valerie E. Caproni
United States District Judge
Southern District of New York
40 Foley Square
New York, NY 10007
CaproniNYSDChambers@nysd.courts.us



Re: United States v. Kevin Johnson, 15 Cr. 565 (VEC)

Dear Judge Caproni:

As directed by this Court in its Memo Endorsement of June 17, 2016, the New York City Office of Chief Medical Examiner ("OCME") hereby responds to defense counsel's letter to the Court of June 16, 2016, particularly with regard to why a protective order would not suffice to protect the OCME's proprietary's interests in its Forensic Statistical Tool ("FST") source code.¹ In order to properly assess whether a protective order would adequately protect the OCME's interests, it is critical first to address defendant's need for the FST source code, including by correcting certain erroneous statements by defense counsel which inaccurately and improperly magnify that purported need.

Defendant's Arguments Contain Material Inaccuracies

Defendant's sole argument for production of the FST source code is his contention that it is necessary for review of the likelihood ratio ("LR") that OCME calculated in the DNA testing used in this matter.² Contrary to defense counsel's assertions, however, reviewing the FST source code is not the only means for defendant's experts to review the likelihood ratio ("LR") calculations; indeed, it is not even necessary for that purpose. *Cf.* Letter of Christopher Flood to Honorable Valerie E. Caproni (June 16, 2016) at 1. Defense counsel already have materials that contain all the information that their experts need to reconstruct the LR for defendant, particularly including the following:³

- the Validation Studies, including the Executive Summary of those studies, which include the relevant drop-in and drop-out rates;
- the allelic frequencies; and

¹ Contrary to defense counsel's assertions, this is the OCME's first opportunity to address the Court's Subpoena Duces Tecum of June 14, 2016, directing production of "the source code for the Forensic Statistical Tool (FST) in its 'native file formats'" (the "FST Source Code Subpoena"), served on June 15, 2016.

² There is no contention of any need to compare the FST Source Code to other computer code to ascertain, for example, whether there has been a violation of copyright or other intellectual property. *Cf., e.g., Computer Assoc. Intl. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992) (reviewing source code to assess copyright infringement).

³ Further, the OCME notes that the relevant materials were also all disclosed to the DNA Subcommittee. *Cf.* May 27 Letter at 3 (asserting that "key facts" were withheld from the Subcommittee).

- the published peer-reviewed article by Adele Mitchell, which defense refers to as the “Mitchell Report” (Adele A. Mitchell et al., “Validation of a DNA mixture statistics tool incorporating allelic drop-out and drop-in”, *Forensic Science International: Genetics*, 6 (2012) 749-61, appended as Exhibit A to the Letter of Christopher Flood to Honorable Valerie E. Caproni (May 27, 2016) (the “May 27 Letter”)).

The LR is calculated using standard Bayesian statistics.⁴ The Validation Studies contain a basic explanation of Bayesian statistics as well as the equations and formulas used in the calculation, particularly in the Executive Summary and Volume 1 (Methods, at 7-9). The calculation of the LR also requires the drop-in and drop-out rates, which are available in the Appendix to Volume 1. The drop-in rates are in Section A, at page 192, and the drop-out rates are in Section B, at pages 192-93. Specific allele frequencies were previously supplied to the defense, in response to defendant’s discovery request dated January 14, 2016.

From these sources and with this information, the defense can use the manual calculations needed to test portions of the program, which are provided in Volume 1 on pages 25-27 and in Table 1F. The manual calculations to test the accuracy of the interpolation process are on pages 28-160; however, no interpolation of rates is required in this case due to the amount of DNA amplified, which was 175 picograms. As listed in Sections A and B of the Appendix, the drop-out rate is consistent above 100 picograms and thus requires no interpolation at that level.

Indeed, this is the sort of calculation that OCME itself performed “manually” in the validation process to check the calculations of the FST program. Despite defense counsel’s skepticism, calculating the LR essentially is “simply a matter of summing known variables on an Excel spreadsheet”. See May 27 Letter at 15.

The City’s Proprietary Interests Outweigh Defendant’s Need for the FST Source Code

The City has copyrighted FST,⁵ and thus has significant constitutionally protected interests in the program and its source code. See U.S. Const., art. I, § 8, cl. 8; see 17 U.S.C. § 106(1)-(3). Over the course of four years, the OCME spent thousands of hours and made extensive investments in training, use of reagents, laboratory supplies, consumables, equipment, and workspace to create, develop, validate, and implement the program. While the City has not yet chosen to monetize this investment, the program remains a valuable resource that could still have significant monetary value in the private sector. See, e.g., *People v. Chubbs*, 2015 Cal. App. Unpub. LEXIS 105 (Cat. App. Calif., 2d App. Dist., Jan. 9, 2015) (denying subpoena for proprietary source code for probabilistic genotyping software).

Requiring production of the FST source code would deprive the City of property rights as well as of a significant cost recovery system. Such a disclosure would impair the market for City materials

⁴ Contrary to defense counsel’s assertion, the LR does not involve “highly arcane mathematics and statistics”. See May 27 Letter at 2. FST uses Bayesian statistics, which is a standard technique in the mathematical field of conditional probability. These formulas are widely understood and have been used in forensics for over a decade. Likelihood ratios have been used in forensic cases in Europe since the late 1980s, and have been used in the United States at least since the highly publicized murder trial of O.J. Simpson. Any expert whom defendant retains to review and advise on FST and the LR should have some facility with these concepts and techniques, including how to apply them using Excel or other formula-driven software.

⁵ The OCME will be pleased to provide the Court with copies of its Certificates of Registration with the United States Copyright Office if needed.

protected under the Copyright Act, thereby preventing the City from recouping the considerable taxpayer funds expended in preparing, maintaining, and updating such materials. Moreover, disclosure of these materials would harm government entities by creating a strong disincentive for consultants to work for the government, if they believed that their work product could be disseminated without cost to outside parties. Such an outcome would affect not only state and local governments but also the federal government. *See* Defend Trade Secrets Act of 2016, Pub. L. No. 114-153, 130 Stat. 376 (signed May 11, 2016) (creating federal civil remedies for violations of intellectual property rights).

A Protective Order Would Be Inadequate

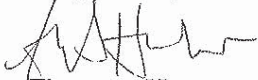
Because FST is currently used by the OCME in cases involving mixtures of DNA of up to three individuals, defense counsel have sought and will continue to seek its production in multiple cases. Since various defense counsel appear to use many of the same experts, it would be difficult to enforce a provision limiting the use of the source code to any particular case: once someone with understanding has reviewed it, that person would never be able to “unsee” the code in a way that would limit their knowledge to the case with the protective order – to unring the bell, as it were. Provision of the source code in this matter would necessarily become production of the source code in multiple criminal matters regardless of the specific circumstances of each case. In other words, one court’s denial of a subpoena for the source code in a particular case could be vitiated if the defendant in that case had retained an expert who had reviewed the source code in another matter. This situation is not hypothetical: at least one of defendant’s experts, Dr. Ranajit Chakraborty, has also been retained in at least one other criminal matter involving FST where a subpoena for the FST source code has been denied.

Were this Court to determine nonetheless that production pursuant to a protective order is warranted in this case, such an order would need to be more than usually stringent. Defense counsel have proposed no compelling reason that they or their experts would need to have possession of the code in any form, let alone in “native” electronic form. In other circumstances, protective orders have permitted review of electronic materials under very strict constraints beyond the provisions of standard protective orders, for example, permitting review only by specified individuals during specified hours at the office of the provider, with monitoring or supervision, without allowing the use of electronic devices or any form of transfer or copying, and with strict limitations on the printing and on the use at trial of those materials.

Conclusion

In sum, defendant does not need the FST source code to protect his right to a fair trial, and the OCME's proprietary interests therefore outweigh defendant's interest in disclosure of the source code, even with a protective order. Because defendant has not met his burden, the FST Source Code Subpoena is not warranted, and the OCME is prepared to move to quash that subpoena with the Court's permission.

Respectfully,



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c: (*via email*)

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